WHAT IS CLAIMED IS:

1. Isolated polynucleotide from coryneform bacteria containing a polynucleotide sequence selected from the group consisting of

   a) a polynucleotide which is at least 70% identical to a polynucleotide which encodes a polypeptide containing the amino acid sequence of SEQ ID NO: 2,

   b) a polynucleotide which encodes a polypeptide which contains an amino acid sequence which is at least 70% identical to the amino acid sequence of SEQ ID NO:2,

   c) a polynucleotide which is complementary to the polynucleotides of a) or b), and

   e) a polynucleotide containing at least 15 successive bases of the polynucleotide sequence of a), b) or c).

2. The polynucleotide according to claim 1, wherein the polynucleotide is DNA replicable in coryneform bacteria.

3. The polynucleotide according to claim 2 which is recombinant DNA.

4. The polynucleotide according to claim 1, wherein the polynucleotide is an RNA.

5. The polynucleotide according to claim 2, containing the nucleic acid sequence represented in SEQ ID NO:1.

6. The replicable DNA according to claim 2, containing

(i) the nucleotide sequence shown in SEQ ID NO:1, or

(ii) at least one sequence which matches the sequence (i) within the degeneration range of the genetic code, or

(iii) at least one sequence which hybridises with the complementary sequence to sequence (i) or (ii) and optionally

(iv) functionally neutral sense mutations in (i).

7. The polynucleotide sequence according to claim 2 which encodes a polypeptide which contains the amino acid sequence shown in SEQ ID NO:2.

8. A process for the fermentative production of L-amino acids, in particular L-lysine, comprising the following steps:

a) fermentation of L-amino acid producing coryneform bacteria in which at least the pfkA gene or nucleotide sequences coding therefor is/are amplified,

b) accumulation of the L-amino acid in the medium or in the cells of the bacteria and

c) isolation of the L-amino acid.

9. The process according to claim 8 wherein the gene or sequences are amplified by overexpression.

10. The process according to claim 8, wherein bacteria are used in which further genes of the biosynthetic pathway of the desired L-amino acid are additionally amplified.

11. The process according to claim 8, wherein bacteria are used in which the metabolic pathways which reduce the formation of L-lysine are at least partially suppressed.

12. The process according to claim 8, wherein a strain transformed with a plasmid vector is used and the plasmid vector bears the nucleotide sequences which encode the pfkA gene.

13. The process according to one of claims 8 to 12, wherein coryneform bacteria are used which produce L-lysine.

14. The process according to claim 8, wherein bacteria are fermented for the production of lysine in which one or more of the genes selected from the group

a) the dapA gene which encodes dihydropicolinate synthase,

b) the pyc gene, which encodes pyruvate carboxylase,

c) the tpi gene, which encodes triosephosphate isomerase,

d) the dapE gene, which encodes succinyldiaminopimelate desuccinylase,

e) the gap gene, which encodes glyceraldehyde 3-phosphate dehydrogenase,

f) the pgk gene, which encodes 3-phosphoglycerate kinase, and

g) the lysE gene, which encodes for lysine export,

is/are simultaneously amplified.

15. The process according to claim 14, wherein the gene(s) is/are amplified by overexpression.

16. The process according to claim 11, wherein bacteria are fermented for the production of L-lysine in which one or more of the genes selected from the group consisting of

a) the pck gene, which encodes phosphoenolpyruvate carboxykinase, and

b) the pgi gene, which encodes glucose 6-phosphate isomerase,

is/are simultaneously attenuated.

17. The process according to one of claims 8-12 or 14-15, wherein microorganisms of the genus Corynebacterium glutamicum are used.

18. A process for production of DNA of genes which encode phosphofructokinase comprising employment of polynucleotide sequences according to claim 1 as primers in a polymerase chain reaction.

19. A hybridization probe comprising a polynucleotide sequence according to claim 1.

add B'